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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,388	03/30/2004	Donald J. Ames	SP04-015	5518

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CORNING INCORPORATED  
SP-TI-3-1  
CORNING, NY 14831

EXAMINER

HOFFMANN, JOHN M

ART UNIT	PAPER NUMBER
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1731

MAIL DATE	DELIVERY MODE
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06/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/814,388	<b>Applicant(s)</b> AMES ET AL.	
	<b>Examiner</b> John Hoffmann	<b>Art Unit</b> 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-16, drawn to a method of joining optical fiber preforms, classified in class 65, subclass 407.
- II. Claims 17-20, drawn to an apparatus for joining preforms, classified in class 65, subclass 501.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used to practice another and materially different process, such as welding bicycle tubes for a bicycle.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required

because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Kevin Able on 4 June 2007 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-4 and 12-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4: there is no antecedent basis for "the flow". Whereas claim 3 indicates a gas is flowed, such is not recited as a step of "flowing" which mirrors the three steps of

claim 1. It more closely mirrors the “selected” language of claim 2, which generally does not connote a selecting step. So it is a bit unclear whether claim 3 requires a step of flowing. Moreover, claim 4 suggests that the flow is actually two stream – which suggests that the single flow is circulated back through the gap. But the plain reading of the specification indicates there are actually two different flows/streams.

Claim 12: there is no antecedent basis for “the gap between the opposing endfaces during heating”. In other words: it is unclear whether claim 12 means that claim 1 inherently has a heating step.

Claims 13-15 there is confusing antecedent basis for the arcs and electrodes. It is unclear whether they are in addition to the arcs and electrodes of claim 1 (i.e. for a minimum of three arcs).

Claim 14: there is no antecedent basis for “the frequency” or “the alternating current”. The claims do not require that the arc is formed by alternating current. Claim 15, there is confusing antecedent basis for “the alternating current supplied to the first pair” : claim 14 does not clearly require a step of supplying alternating current to the first pair.

Claim 16: there is no antecedent basis for “the joined optical fiber preform”.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5, 12 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Hakoun 4695306.

The aligning step is disclosed at figure 3 and the associated text. Col. 2, lines 64-66, figure 1, col. 4, lines 2-4, and col. 5, lines 42-51 discloses the forming. And col. 6, lines 13-16 discloses the moving step. Although Hakoun discloses features 2 and 6 to be “optical fibers” and the present claim requires “optical fiber preforms”, the use of “preform” does not serve to define over Hakoun. Examiner sees nothing which would prevent one from drawing the Hakoun fibers into thinner fibers. In other words: the term “preform” is an intended use. It is noted that only claim 16 actually requires the forming of a further optical fiber. It is also noted that a straight fiber can be a preform to a helical optical fiber.

In the event that applicant disputes the Office’s position by asserting that Hakoun does not clearly disclose some claim feature, it noted that one of ordinary skill would immediately infer such from Hakoun. As per Jiang 2003/0059179 [0004] – such is “well known and widely practiced”.

From MPEP 2144.01 Implicit Disclosure:

“[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

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See also, *In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir 1985).

Claim 2: see Hakoun, col. 4, lines 2-4.

Claim 5: See [0039] which discloses current. There are only two types of current: AC and DC. Hakoun's disclosure of current is disclosure of both types.

Claim 7 does not specify what is moving. An electric arc is a movement of electrons. The electrons are moving between the electrodes and the preforms.

Claim 12 is clearly met.

### ***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9-11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakoun 4695306.

Claim 9-11 it would have been obvious to make the arc as long or as short as desired.

**From MPEP 2144.04**

**A. Changes in Size/Proportion**

In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.



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As to claim 13: it would have been obvious to have as many apparatuses making the couplings: depending upon the number of couplings desired. Each apparatus has its own pair making its own arc.

**From MPEP 2144.04****B. Duplication of Parts**

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web" which lies \*\* in the joint, and a plurality of "ribs" \*\* >projecting outwardly from each side of the web into one of the adjacent concrete slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.).

Claim 14 refers to "a" frequency for one set of electrodes, and "the" frequency for another set. It is deemed that that the use of "the" connotes the inherent frequency of the second set, but that the use of "a" encompasses any other frequency. Any alternating current having a first frequency, would also have another frequency that is one half of the first. For example common 60 hertz power line repeats its wave at a frequency of once ever  $1/60^{\text{th}}$  of a second. It also repeats a double wave at a frequency of once every  $1/30^{\text{th}}$  of a second.

See also claim 15 which depends from claim 14 and requires the phases to be locked together. Clearly if the only way the phases can be locked together, is if they are identical.

Claim 15: it would have been obvious to use the same power source to supply the welding current, rather than create an additional power source. Having the same source would mean the currents would be identical and thus inherently be locked.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakoun 4695306 as applied to claim 1 above, and further in view of Official Notice or Tynes 4958905.

Examiner takes Official notice that it is well known in the welding art to use an inert shield flowing around tungsten electrodes so as to prevent the oxidation of the electrode as which would readily occur if nothing were to protect the tungsten. Thus it would have been obvious to flow gas along the electrodes – substantially as applicant has done so as to prevent the oxidation of the electrode.

Tynes can be applied to show it is known in the optical fiber splicing art to use inert gas to prevent the fibers from being contaminate (see Abstract). IT would have been obvious to use inert gas as claimed to prevent the Hakoun fibers/preforms from being contaminated.

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Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakoun 4695306 as applied to claim 1 above, and further in view of Kasuu 6886998

Hakoun does not teach the use of square waveforms. Kasuu teaches such (at the paragraph spanning col. 4-5) so as to easily modulate the current which permits one to optimize the temperature of the splice to create a better splice (col. 2, lines 13-63. It would have been obvious to use a square waveform with the Hakoun splicing so as to better control the temperature, and thus the quality of the splice.

Claims 8-11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakoun 4695306 in view of Drouart 6178779.

Hakoun does not disclose the rotation. It is noted that Hakoun is directed to fibers with small diameters. It would have been obvious to apply the Hakoun method to any glass objects that one desires to join.

**From MPEP 2144.04**

**A. Changes in Size/Proportion**

In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

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patentably distinct from the prior art device.

However Drouart points out that with joining large objects has problems and to solve these problems by moving the preform and heat source relative to each other (col. 1, lines 28-39). It would have been obvious to apply the Kahoun process to larger glass objects by using the Drouart teaching of moving the heat source and preforms so as to better control the heating of the surfaces.

Additionally and/or alternatively: The prior art recognizes a few heat source for joining glass objects: lasers, plasma torches, discharge arcs, resistive furnaces, plus a few others. It would have been obvious to try any of these few known heating devices to determine which would yield optimal fusion bonding. Drouart teaches that is known that joining large preforms causes problems.

As indicated by the Supreme Court in KSR vs. Teleflex:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103.

Presently, it would have been of ordinary skill and common sense to use a known arc welding process (such as what Hakoun discloses) , but just scale it up but using the Drouart teaching of controlling relative motion so as to control where the heat is applied.

Whereas Drouart discloses rotating the preform, it is deemed that such is equivalent to rotating the electrodes – and such would have been obvious, depending upon which structure is easier to move.

Alternatively: Drouart's movement of burner 15 as represented by figures 2-3 constitutes "rotation" as broadly defined by applicant. It is noted that from [0039] that the rotation can be a "partial rotation", and it is merely preferable that it at least 180 degrees. Also, as from lines 168 and 170 of applicant's figure 8, the rotation is not centered at the fiber – and that such is a rather small arc. Turning to Drouart's figure 2, the heater 15 is at an about an "8:30" position relative to the center A, but figure 3 shows the heater has been changed to about a 7:30 position. This corresponds to a about a 30 degree shift in direction around center A. It is presumed that this 30 degree shift reads on the broadest reasonable interpretation of a rotation about the axis – in as much as any of applicant's drawing show rotation about the axis.

Claims 9-11 are included here because Drouart refers to preforms of 170mm which is in excess of 5 inches.

Claim 16 is clearly met.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kaehni, Descarsin, Shimada, Guyer, and Conde are cited as being relevant references that Examiner found during the prior art search.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

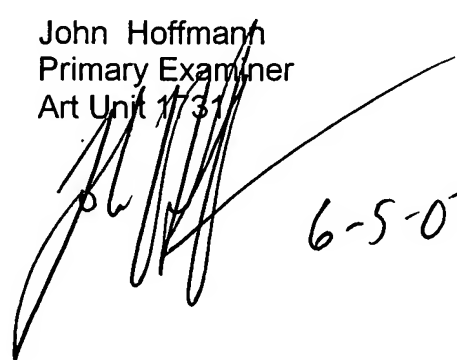
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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jmh

John Hoffmann  
Primary Examiner  
Art Unit 1731



6-5-07